PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 :
C07D 409/12, 307/68, 405/12, 409/14, 405/14, 307/32, A61K 31/4015, 31/365, 31/40, 31/381, A61P 37/02

A2

(11) International Publication Number: WO 00/69855

(43) International Publication Date: 23 November 2000 (23.11.00)

(21) International Application Number: PCT/GB00/01894

(22) International Filing Date: 18 May 2000 (18.05.00)

(30) Priority Data:
9911417.5 18 May 1999 (18.05.99) GB

(71) Applicants *(for all designated States except US)*: MEDIVIR UK LIMITED [GB/GB]; Peterhouse Technology Park, 100 Fulbourn Road, Cambridge CB1 9PT (GB). PEPTIMMUNE, INC. [US/US]; 64 Sidney Street, Cambridge, MA 02139 (US).

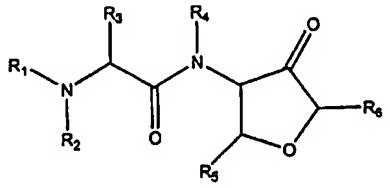
(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: QUIBELL, Martin [GB/GB]; 23 Fennec Close, Cherry Hinton, Cambridge CB1 9GS (GB). TAYLOR, Steven [GB/GB]; 100 Holly Trees, Bar Hill, Cambridge CB3 8SG (GB).

(74) Agent: DAVIES, Jonathan, Mark; Reddie & Grose, 16 Theobalds Road, London WC1X 8PL (GB).

(81) Designated States: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: FURANONE DERIVATIVES AS INHIBITORS OF CATHEPSIN S



(II)

(57) Abstract

Cathepsin S is a highly active cysteine protease belonging to the papain superfamily. It is found mainly in lymph nodes, spleen, and macrophages and this limited occurrence suggests the potential involvement of this enzyme in the pathogenesis of degenerative disease. The invention relates to novel protease inhibitors, particularly inhibitors of the cysteine proteases of the papain superfamily and more particularly to Cathepsin S. The inhibitors are Furanone derivatives of Formula (II) which have a characteristic non–hydrogen substituent R5. They are selective over other members of the family and in particular show selectivity over other members of the Cathepsin family such as L and K.